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09/749,677	12/28/2000	Masaki Okayasu	Q62316	8681

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EXAMINER

CHEN, TIANJIE

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,677

Applicant(s)

OKAYASU ET AL.

Examiner

Tianjie Chen

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,10,13-15 and 19 is/are rejected.
- 7) ☒ Claim(s) 8,11,12,16-18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2652

Non-Final Rejection

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 13-15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miike (US 6,111,827) in view of Park (US 5,995,478).

With regard to claim 13, Miike shows an apparatus in Figs. 4 and 6, including: a movable member 13 that is supported by on the shaft 18; and a hybrid optical module 1 having a light emitting 38 and receiving device 32 mounted on the movable member, wherein the hybrid optical module is moved along the first shaft and the second shaft by the moveable member to perform a tracking operation on an optical medium, wherein a portion of the hybrid optical module, which is closer to the first shaft 18, is cut out in substantially parallel with the first shaft, and wherein the portion of the hybrid optical module is cut by an angle A that is substantially equal to an incident angle B of an optical path with respect to a tracking direction of the optical medium (See drawing in next page).

Miike does not show that the movable member is supported by at least two shafts.

Park shows an optical module supporting mechanism in Figs. 2 and 3, wherein the movable member supported by two shaft through the corresponding holes on the

Art Unit: 2652

movable body, and the is tilt and horizontal position can be adjusted (Column 3, line 66 to column 4, line 3).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to replace the moving body in Miike's device by the mechanism taught by Park. The rationale is as follows: Miike's teaches the importance of the relative position and orientation of the optical pickup to the disk (Abstract). Miike's invention provides the mechanism for adjusting the lens in pickup, but fails to teach to adjust the tilt and horizontal position as it moves along guide shafts. Park teaches a method of adjust the tilt and horizontal position as the pickup moving along the support shaft. One of ordinary skill in the art would have been motivated to replace the movable body in Miike's device with the one taught by Park having two holes with two support shaft going through and to be adjusted by the mechanism 24a-c and 28 in order to have the function of adjusting the tilt and horizontal position as it moves.

With regard to claim 14, Miike further shows that the hybrid optical module integrates optical components, and. wherein the optical components 28-32 and 38 are formed on a substrate (the bottom of the cavity in Fig. 6).

With regard to claim 15, Miike further shows that the substrate and the optical components are housed in a package.

With regard to claim 19, Miike further shows that the hybrid optical module is pentagon-shaped.

2. Claims 1-7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miike (US 6,111,827) in view Park and of Ohtsuka et al (US 5,297,127).

Art Unit: 2652

With regard to claim 1, Miike shows a mounting structure of a hybrid optical module in Figs. 4 and 6 including: a movable member 1 that is supported by shaft 18, a recording medium drive apparatus shown in Fig 4 including a hybrid optical module having a light emitting 38 (Fig. 4; column 13, line 14) and receiving device 32 (Fig. 4; column 14, line 31) mounted on the movable member, the hybrid optical module 1 being slid on the shafts 18 and 19 so as to perform a tracking operation on an optical recording medium (moving radially, column 6, lines 4-6), wherein a portion P of the hybrid optical module which is closer to one of the shafts 18 when the hybrid optical module is mounted on the movable member is cut out in substantially parallel with the shaft, and by an angle A which is substantially equal to an incident angle B of an optical path with respect to a tracking direction of the optical recording medium.

Miike does not show the movable member is supported by at least two shafts. However, it would have been obvious at the time the invention was made to one of ordinary skill in the art to replace the movable body by the one taught by Park for the reason described above.

Miike does not show a driving coil attached to the movable member.

Ohtsuka et al shows an optical device, wherein a driving coil 13 is attached to the movable member 1 (Fig. 1, column 2, lines 26-31).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to add the coil taught by Ohtsuka et al into Miike's device. The rationale is as follows: Miike has mentioned that the movable member is moved by a sled motor (column 6, lines 8-10), but was not illustrated. Ohtsuka et al shows a moving mechanism, which is moved by a sled motor having a coil attached on the movable member. And use a coil for moving the movable member in an optical

Art Unit: 2652

tracking system is well known and notorious in the art. One of ordinary skill in the art would have been motivated to add the coil taught by Ohtsuka et al into Miike's device, thus being able to move the movable member.

With regard to claim 2, Miike further shows that a spindle motor 17 (Fig. 4, column 6, line 12) is placed to be closer to the shaft 19 in a direction of light incidence of an optical system including the hybrid optical module, and the hybrid optical module having a cut portion P which is closer to another shaft 18 is mounted with a pick-up unit shown in Fig. 7.

With regard to claim 3, Miike further shows that the angle A by which the portion of the hybrid optical module is cut out is in a range of 30° to 45° substantially.

With regard to claim 4, Miike and Ohtsuka et al shows a recording medium drive apparatus as described above including: a movable member that is supported by at least two shafts, and a polygonal hybrid optical module having a light emitting and receiving device which is mounted on the movable member, and a driving coil attached to the movable member, the hybrid optical module being slid on the shafts so as to perform a tracking operation on a recording medium, wherein a portion of the hybrid optical module which is closer to one of the shafts is cut out in substantially parallel with the shafts, and by an angle which is substantially equal to an incident angle of an optical path in a tracking direction of the recording medium.

With regard to claim 5, Miike further shows that the hybrid optical module 1 integrates optical components.

With regard to claim 6, Miike further shows that the optical components are formed on a substrate (the bottom of the cavity in Fig. 6).

Art Unit: 2652

With regard to claim 7, Miike further shows the substrate and the optical components are housed in a package.

With regard to claim 9, Miike further shows that the hybrid optical module includes: a substrate (the bottom of the cavity in Fig. 6); a photo detector 32 formed on the substrate; a prism 34 formed on the substrate; and a laser diode 38 formed on the substrate.

Miike does not specifically mentioned photo diode.

Official Notice is taken: it is well known in the art that photo diode is commonly used as photodetector.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to find in Miike's device photo diode could be included. The rationale is as follows: Applicant does not specifically disclose the photo diode and photodetector. Miike's device includes photodetector, which could be a photo diode. One of ordinary skill in the art would have expected that the photodetector used in Miike's device could include photo diode.

With regard to claim 10, in above mentioned device, the substrate, the photo detector, the prism, the photo diode, and the laser diode are housed in a package.

Allowable Subject Matter

3. Claims 8, 11, 12, 16-18, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

Art Unit: 2652

- With regard to claims 8, 11, 12, and 16; as the closest reference, Miike (US 6,111,827) shows a mounting structure including a hybrid optical module and two shafts, wherein the optical elements are housed in a package; **but fails to show** an area of the package, as viewed along a plane containing at least the two shafts, is smaller than an area of the moveable member, as viewed along the plane.
- With regard to claim 17, as the closest reference, Miike (US 6,111,827) shows a mounting structure including a hybrid optical module and two shafts, a spindle on which the optical medium rotates; and an objective lens for directing light towards the optical medium, **but fails to show** that the hybrid optical module is disposed completely between the first shaft and a plane containing an optical axis of the objective lens and a rotational axis of the spindle.
- Applicant asserts that by using above structure, the interference with the shaft can be prevented from occurring, and an unnecessary space can be reduced (Specification, p. 5, lines 3-5).

Response to Arguments

5. Applicant's arguments with respect to claims 1 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

Art Unit: 2652

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TIANJIE CHEN
PRIMARY EXAMINER